

Robert Pyke, Consulting Engineer

March 4, 2014

You Chen (Tim) Chao
Senior Engineer
Delta Stewardship Council
980 9th Street, Suite 1500
Sacramento, CA 95814

Re: RFP No. 14-001 “Delta Levee Prioritization”

Dear Tim,

I have the following questions/comments regarding this RFP:

1. On Page 7, in the Second Paragraph of the Scope of Work, why are the Economic Sustainability Plan of the Delta Protection Commission and the Framework for DWR Integrated Flood Management Investments in the Delta, Draft v9, especially Appendices C and D, not listed as sources of “best available data”?

I understand that the recommended data sources are not necessarily limited to those listed, but to the best of my knowledge there is no useful information on levees in the Delta Plan EIR, the draft BDCP or the BDCP public draft EIR/EIS. There is much useful information in the DRMS reports, although I note that some of it is out-of-date and that the conclusions of the DRMS studies are largely superseded by those of the Economic Sustainability Plan. Further, the Economic Sustainability Plan passed peer review with, more or less, flying colors, while the DRMS study barely survived peer review and the peer review panel recommended that its numbers not be taken at face value. The latest revision of the “Framework” is very good and represents a substantial improvement from earlier drafts. While it remains a draft and the main text needs further work in order to give more weight to flood management and the protection of life and property, Appendix C, the Background/Reference Memorandum, is said to have been previously approved by the Director, and Appendix D provides an obvious starting point for the proposed study.

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2. Why does Item (c) (1) on page 13 refer to “the recommended levels of protection and typical levee cross section shown in the Delta Plan” when the first paragraph under (c) Appropriate Level of Flood Protection, on page 9 tasks the consultant with recommending appropriate flood risk tolerances or criteria?

The wording on page 9 is in fact very good, while the language on page 13 is inappropriate. As a result of some miscommunications at the time, the Delta Plan did not include the first two recommendations regarding levees from the Economic Sustainability Plan¹, but subsequent developments, including the successful construction on Jones Tract of levees generally in accordance with the “higher Delta-specific standard”, popularly known as “fat levees” have confirmed the wisdom of these recommendations. Most egregiously, the Delta Plan reflects language in the draft “Framework” of that time which put barriers in the way of any levee improvements beyond the HMP non-standard. Three years later that language has now disappeared from the “Framework” and the current draft states that “the suggested minimum level of flood protection appropriate to protect assets of significant statewide interest in non-urban and non-urbanizing areas is presented in DWR Bulletin 192-82”, which is essentially the same as the Delta-specific PL 84-99 standard. Because, as explained in both Appendix C of the “Framework” and the Economic Sustainability Plan, the Delta levees act as a system, this means essentially all Delta islands and tracts need to be protected at at least this level. Further, with the Memorandum of Understanding between FEMA and the State having expired, the HMP non-standard has disappeared even as an administrative guideline.

¹ **Improve and maintain all non-project levees to at least the Delta-specific PL 84-99 standard.** This engineering standard has been developed and supported by numerous studies and should remain the basic standard for non-project levees. These improvements are attainable and have economic benefits that exceed their cost, particularly when considered in the context of the systemic value of multiple infrastructure systems protected by the levee system. Achieving this goal will increase water supply reliability, and will leverage the substantial benefit of federal support through USACE in the event of future levee failures. Project levees should also be improved as necessary and maintained to a similar standard.

Improve most “lowland” levees and selected other levees to a higher Delta-specific standard that more fully addresses the risks due to earthquakes, extreme floods, and sea-level rise, allows for improved flood fighting and emergency response, provides improved protection for legacy communities, and allows for growth of vegetation on the water side of levees to improve habitat. Improvement of most Delta lowland levees and selected other levees to this higher standard would cost \$1 to \$2 billion in base construction costs over the cost of reaching the PL 84-99 standard. Including vegetation and habitat enhancement, total program costs might be in the order of \$4 billion, similar to the cost projected by the PPIC (2007) in their “Fortress Delta” alternative.

I might also note that because the Delta levees act as a system, the emphasis on island-by-island prioritization in this RFP is overstated. I know that the Delta Reform Act requires that the Council undertake a prioritization exercise in association with the Flood Board, but I don't believe that this was intended to be a make work exercise for Council staff and consultants. I do believe that the collection of island-by-island data and the assessment of benefits to the various beneficiaries will be most helpful in paving the way for a future Delta Flood Risk Management Assessment District, but your consultant should not overemphasize island-by-island prioritization at the expense of remembering that the levees act as a system. I have previously suggested that this prioritization should be done more in terms of categories of islands and tracts, rather than individual islands and tracts, using categories such as:

The eight western islands which are critical to maintaining water quality;
Islands that house state highways and other critical infrastructure such as the BNSF railroad, the Mokelumne Aqueduct and various gas and electric power facilities;
Islands that are critical for the passage of flood flows through the Delta;
Islands that border the paths for through-Delta conveyance of water for export;
Islands that serve as critical habitat for migrating birds or other species;
Islands that protect legacy communities and the national heritage.

Because not all Delta levees could be simultaneously improved to the higher Delta-specific levee standard simultaneously, even if funds were magically available, it would be helpful to know which of these groupings would return the greatest benefit if they were improved to that higher standard, because it is not immediately obvious which should be raised to that standard first.

I would be most happy to discuss these questions/comments further with you, other staff, and the Council, as I believe that it is most important that these questions be clarified before you select a consultant and initiate work on this proposed study.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert Pyke". The signature is fluid and cursive, with the first name "Robert" and last name "Pyke" clearly distinguishable.

Robert Pyke Ph.D., G.E.